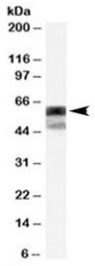
P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody (R33435)

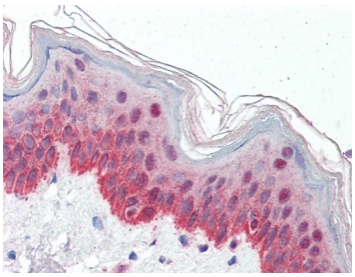
Catalog No.	Formulation	Size
R33435-100UG	0.5 mg/ml in 1X TBS, pH7.3, with 0.5% BSA (US sourced) and 0.02% sodium azide	100 ug

Bulk quote request

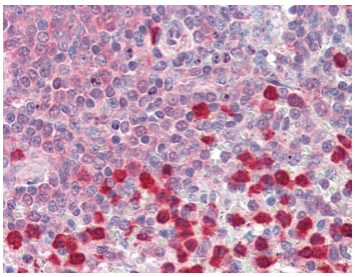
Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Mouse, Rat, Dog
Format	Antigen affinity purified
Host	Goat
Clonality	Polyclonal (goat origin)
Isotype	Goat Ig
Purity	Antigen affinity
Gene ID	5033
Localization	Cytoplasmic
Applications	Western blot: 0.1-1ug/ml IHC (FFPE): 5ug/ml ELISA (peptide) LOD: 1:32000
Limitations	This P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody is available for research use only.



P4HA1 Antibody HEK293 WB. Western blot analysis was performed on HEK293 cell lysate using P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody at 0.2 ug/ml. A prominent immunoreactive band is detected at approximately 60 kDa, consistent with the expected molecular weight of P4HA1, together with an additional band at approximately 48 kDa. Both bands are abolished by pre-incubation of the antibody with the immunizing peptide, confirming their specificity. These results demonstrate that this P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody is suitable for specific Western blot detection of endogenous P4HA1 in HEK293 cell lysates.



P4HA1 Antibody Human Skin IHC. Immunohistochemistry was performed on FFPE human skin tissue using P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody at 5 ug/ml. Heat-induced epitope retrieval was carried out by steaming sections in pH 6 citrate buffer prior to staining. Binding was visualized using an alkaline phosphatase detection system with a red chromogen. Distinct cytoplasmic staining is observed predominantly within the basal and suprabasal layers of the epidermis, consistent with expression of P4HA1 in metabolically active keratinocytes involved in extracellular matrix maintenance and collagen biosynthesis. These results demonstrate that this P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody is suitable for immunohistochemical detection of endogenous P4HA1 in formalin-fixed, paraffin-embedded human skin tissue.



P4HA1 Antibody Human Spleen IHC. Immunohistochemistry was performed on FFPE human spleen tissue using P4HA1 Antibody at 5 ug/ml. Heat-induced epitope retrieval was carried out by steaming sections in pH 6 citrate buffer prior to staining. Binding was visualized using an alkaline phosphatase detection system with a red chromogen. Distinct cytoplasmic staining is observed in a subset of splenic cells, with strongest labeling in cells of the red pulp, consistent with endogenous expression of P4HA1 in metabolically active stromal and hematopoietic cell populations. These results demonstrate that this Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody is suitable for immunohistochemical detection of endogenous P4HA1 in formalin-fixed, paraffin-embedded human spleen tissue.

Description

P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody recognizes Prolyl 4-Hydroxylase Subunit Alpha 1 (P4HA1), the catalytic alpha subunit of collagen prolyl 4-hydroxylase, an essential enzyme responsible for hydroxylating proline residues during collagen biosynthesis. This post-translational modification is required for proper folding and stabilization of the collagen triple helix, allowing newly synthesized collagen molecules to mature and assemble into functional extracellular matrix. Because collagen is the principal structural protein of connective tissues, Prolyl 4-Hydroxylase Subunit Alpha 1 is indispensable for normal tissue development, wound healing, and maintenance of extracellular matrix integrity. NSJ Bioreagents supplies P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody for reliable detection of this important collagen-modifying enzyme in a wide range of research applications.

Prolyl 4-Hydroxylase Subunit Alpha 1 is localized primarily within the lumen of the endoplasmic reticulum, where it associates with beta subunits to form the active collagen prolyl 4-hydroxylase complex. Enzymatic activity depends upon molecular oxygen, iron, alpha-ketoglutarate, and ascorbate, directly linking collagen maturation to cellular metabolism and oxygen availability. Expression of P4HA1 is increased by hypoxia and transforming growth factor beta signaling, promoting collagen deposition during tissue remodeling and repair. Consequently, P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody is widely used to investigate collagen biosynthesis, extracellular matrix organization, fibrosis, and hypoxia-responsive signaling pathways.

Elevated expression of Prolyl 4-Hydroxylase Subunit Alpha 1 has been documented in numerous malignancies, including breast, lung, liver, ovarian, and bladder cancers, where increased collagen remodeling contributes to tumor invasion, angiogenesis, metastasis, and therapeutic resistance. P4HA1 is likewise implicated in fibrotic disorders affecting the lung, liver, kidney, and heart, making it an important biomarker and potential therapeutic target. Researchers frequently investigate Prolyl 4-Hydroxylase Subunit Alpha 1 to better understand extracellular matrix remodeling, tissue stiffness, wound healing, and chronic fibrosis.

A P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody is a valuable reagent for investigating collagen maturation, extracellular matrix remodeling, connective tissue biology, and hypoxia-driven cellular adaptation. By enabling reliable detection of Prolyl 4-Hydroxylase Subunit Alpha 1, a P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody supports research into fibrosis, cancer progression, tissue repair, and the molecular mechanisms that regulate

collagen biosynthesis.

For a broader overview of this collagen-modifying enzyme and additional validated reagents, visit our P4HA1 Antibody / Collagen Biosynthesis Enzyme Antibody page.

Application Notes

Optimal dilution of the P4HA1 Antibody / Prolyl 4-Hydroxylase Subunit Alpha 1 Antibody should be determined by the researcher.

Immunogen

Amino acids DFARKDEPDAFKE were used as the immunogen for this P4HA1 antibody.

Storage

Aliquot and store the P4HA1 antibody at -20oC.

Alternate Names

Prolyl 4-Hydroxylase Subunit Alpha 1 antibody, Prolyl 4-Hydroxylase Alpha 1 antibody, Collagen Prolyl Hydroxylase Alpha 1 antibody, Procollagen Prolyl 4-Dioxygenase Alpha 1 antibody, C-P4H Alpha 1 antibody, P4H Alpha 1 antibody

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